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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,188	08/28/2003	Shugong Xu	J-SLA.1310	6242

55428 7590 03/16/2007
ROBERT VARITZ
4915 SE 33RD PLACE
PORTLAND, OR 97202

EXAMINER

RICHMOND, LEAH L

ART UNIT	PAPER NUMBER
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2609

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/650,188

Applicant(s)

XU, SHUGONG

Examiner

Leah L. Richmond

Art Unit

2609

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/28/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Objections to Drawings

Figs. 1 and 2 are labeled by hand and Figs. 3 and 4 are drawn and labeled by hand. The drawings are objected to because they are handdrawn- Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office Action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended". If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the Examiner, the Applicant will be notified and informed of any required corrective action in the next Office Action. If a response to the present Office Action fails to include proper drawing corrections, corrected drawings or arguments therefor, the response can be held NON-RESPONSIVE and/or, the application could be ABANDONED since the objections/corrections to the drawings are no longer held in abeyance.

Objections to Specification

Page 5, line 6 states "... here there is shown generally illustrates at 10 a packet-based wireless communication ..." This wording is unclear. Perhaps it should be changed to read "... element 10 generally illustrates ..." or "... element 10 shows ..."

Page 5, line 19 states "... generally in a descriptive section hereinbelow." Hereinbelow is not a word, and should perhaps be replaced by either herein or below.

Page 11, line 5 states "...in a system, such as system 10 which offers this treatment ..." It is not clear that this refers to system 10 in Fig. 1. Perhaps it should be changed to read "... such as system 10 of Fig. 1 which ..."

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 2, 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shellhammer ("IEEE 802.15.2 Clause 14.1 – Collaborative Coexistence Mechanism").

Consider **claim 1**, Shellhammer clearly shows and discloses a method employable in a wireless communication network for managing bandwidth-sharing of available bandwidth, comprising establishing a pattern of periodic beacon transmissions having a defined first time spacing between transmissions, choosing a sub-pattern of selected, periodic beacon transmissions having a defined second time spacing between transmissions, and utilizing only the selected beacon transmissions in this sub-pattern to convey the announcement of any new transmission-budget information (page 2, Figure 14.1.x: Timing of the WLAN and WPAN subintervals, and page 2, Section 14.1.2 Alternating Wireless Medium Access (AWMA): "The IEEE 802.11 WLAN Access Point sends out a beacon at a periodic interval. The beacon period is T_B . AWMA subdivides this interval into two subintervals: one for WLAN traffic and one for WPAN traffic. Figure 14.1.x illustrates the separation of the WLAN beacon interval into two subintervals. The WLAN interval begins just prior to the WLAN *target beacon transmit time* (TBTT). The time from the beginning of the WLAN interval to the TBTT is specified as T_1 . The duration of WLAN subinterval is T_{WLAN} . The duration of the WPAN subinterval is T_{WPAN} . The combined duration of these two subintervals must equal the WLAN beacon period. So $T_{WLAN} + T_{WPAN} = T_B$." and page 3, Section 14.1.4 Restriction on WLAN and WPAN Transmissions: "AWMA requires that all WLAN transmissions are restricted to occur

during the WLAN subinterval. Similarly, all WPAN transmissions are restricted to the WPAN subinterval.”). In the case where $T_{\text{WLAN}} = T_{\text{WPAN}}$, then the periodic beacon interval can be thought of as $(\frac{1}{2})T_B$, and the sub-pattern for either WLAN or WPAN to convey information is alternating beacon intervals. An obvious variation is the case where T_{WLAN} equals T_B , and alternates with T_{WPAN} , where T_{WPAN} also equals T_B . In this case, the periodic beacon transmission interval is T_B and the sub-pattern is alternating beacon transmissions. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to send out a beacon at a periodic interval, and allow different traffic types to use alternating intervals, as taught by Shellhammer, for the purpose of allowing traffic from multiple sources to share bandwidth.

Consider **claim 2**, and as applied to claim 1, Shellhammer clearly shows and discloses a method employable in a wireless communication network for managing sharing of available bandwidth among plural communication stations, wherein the utilizing step comprises utilizing only the selected beacon transmissions in a chosen sub-pattern to convey the announcement of any new transmission-budget information (page 2, Figure 14.1.x: Timing of the WLAN and WPAN subintervals, and page 2, Section 14.1.2 Alternating Wireless Medium Access (AWMA): “The IEEE 802.11 WLAN Access Point sends out a beacon at a periodic interval. The beacon period is T_B . AWMA subdivides this interval into two subintervals: one for WLAN traffic and one for WPAN traffic. Figure 14.1.x illustrates the separation of the WLAN beacon interval into two subintervals. The WLAN interval begins just prior to the WLAN *target beacon*

transmit time (TBTT). The time from the beginning of the WLAN interval to the TBTT is specified as T_1 . The duration of WLAN subinterval is T_{WLAN} . The duration of the WPAN subinterval is T_{WPAN} . The combined duration of these two subintervals must equal the WLAN beacon period. So $T_{WLAN} + T_{WPAN} = T_B$." and page 3, Section 14.1.4 Restriction on WLAN and WPAN Transmissions: "AWMA requires that all WLAN transmissions are restricted to occur during the WLAN subinterval. Similarly, all WPAN transmissions are restricted to the WPAN subinterval."). Shellhammer discloses a situation where traffic from more than one source sends information in an alternating pattern; however, an obvious variation of this is to have only one traffic source sending information in an alternating pattern, leaving the alternate interval empty of information (i.e. WLAN uses the WLAN subinterval and no information is sent during the WPAN subinterval). In this case, only one sub-pattern of beacon intervals contains any information. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to only convey transmission-budget information in a chosen sub-pattern of transmissions (and not to convey any transmission-budget information in other sub-patterns) in the method for managing bandwidth-sharing as in Shellhammer for the purpose of making other sub-patterns of transmissions available for some other use.

Consider **claim 3**, and as applied to claim 1, Shellhammer clearly shows and discloses a method employable in a wireless communication network for managing sharing of available bandwidth among plural communication stations, wherein the utilizing step comprises utilizing only the selected beacon transmissions in a chosen sub-pattern to convey the announcement of any new transmission-budget information

(page 2, Figure 14.1.x: Timing of the WLAN and WPAN subintervals, and page 2, Section 14.1.2 Alternating Wireless Medium Access (AWMA): "The IEEE 802.11 WLAN Access Point sends out a beacon at a periodic interval. The beacon period is T_B . AWMA subdivides this interval into two subintervals: one for WLAN traffic and one for WPAN traffic. Figure 14.1.x illustrates the separation of the WLAN beacon interval into two subintervals. The WLAN interval begins just prior to the WLAN *target beacon transmit time* (TBTT). The time from the beginning of the WLAN interval to the TBTT is specified as T_1 . The duration of WLAN subinterval is T_{WLAN} . The duration of the WPAN subinterval is T_{WPAN} . The combined duration of these two subintervals must equal the WLAN beacon period. So $T_{WLAN} + T_{WPAN} = T_B$." and page 3, Section 14.1.4 Restriction on WLAN and WPAN Transmissions: "AWMA requires that all WLAN transmissions are restricted to occur during the WLAN subinterval. Similarly, all WPAN transmissions are restricted to the WPAN subinterval."). Shellhammer discloses a situation where traffic from more than one source sends information in an alternating pattern; however, an obvious variation of this is to have only one traffic source sending information in an alternating pattern, leaving the alternate interval available for repeating the information that was just sent (i.e. WLAN uses the WLAN subinterval for new information, and the information just sent during the WLAN interval is repeated during the WPAN interval). In this case, only one sub-pattern of beacon intervals contains any new information; remaining sub-patterns repeat the information just sent. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to only convey new transmission-budget information in a chosen sub-pattern of transmissions

(and to repeat this information in non-chosen sub-patterns) in the method for managing bandwidth-sharing as in Shellhammer for the purpose of providing copies of the new transmission-budget information for use in error correction.

Consider **claim 4**, Shellhammer clearly shows and discloses an apparatus employable in a wireless communication network for managing bandwidth-sharing of available bandwidth, comprising an access point station that establishes a pattern of periodic beacon transmissions having a defined first time spacing and constructed to convey transmission-budget announcements, and behavior structure to choose a sub-pattern of selected, periodic beacon transmissions having a defined second time spacing and to use only the selected beacon transmissions in this sub-pattern to convey the announcement of any new transmission-budget information (page 2, Section 14.1.1 Collaborative Coexistence Mechanism: "The WLAN/WPAN collaborative coexistence mechanism requires a communication link between the WLAN and WPAN networks. This communication link can be a wired connection between a WLAN radio and a WPAN radio, if they are both embedded in the same host unit. This collaborative mechanism is used to coordinate access to the wireless medium, between the WLAN and WPAN." and page 3, Section 14.1.4 Restriction on WLAN and WPAN Transmissions: "AWMA requires that all WLAN transmissions are restricted to occur during the WLAN subinterval. Similarly, all WPAN transmissions are restricted to the WPAN subinterval." and page 2, Figure 14.1.x: Timing of the WLAN and WPAN subintervals, and page 2, Section 14.1.2 Alternating Wireless Medium Access (AWMA): "The IEEE 802.11 WLAN Access Point sends out a beacon at a periodic interval. The

beacon period is T_B . AWMA subdivides this interval into two subintervals: one for WLAN traffic and one for WPAN traffic. Figure 14.1.x illustrates the separation of the WLAN beacon interval into two subintervals. The WLAN interval begins just prior to the WLAN *target beacon transmit time* (TBTT). The time from the beginning of the WLAN interval to the TBTT is specified as T_1 . The duration of WLAN subinterval is T_{WLAN} . The duration of the WPAN subinterval is T_{WPAN} . The combined duration of these two subintervals must equal the WLAN beacon period. So $T_{WLAN} + T_{WPAN} = T_B$.”). In the case where $T_{WLAN} = T_{WPAN}$, then the periodic beacon interval can be thought of as $(\frac{1}{2})T_B$, and the sub-pattern for either WLAN or WPAN to convey information is alternating beacon intervals. An obvious variation is the case where T_{WLAN} equals T_B , and alternates with T_{WPAN} , where T_{WPAN} also equals T_B . In this case, the periodic beacon transmission interval is T_B and the sub-pattern is alternating beacon transmissions. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to send out a beacon at a periodic interval, and allow different traffic types to use alternating intervals, as taught by Shellhammer, for the purpose of allowing traffic from multiple sources to share bandwidth.

Conclusion

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Leah Richmond whose telephone number is (571) 270-1774. The Examiner can normally be reached on Monday-Thursday from 9:00am to 6:00pm Eastern Standard Time.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Rafael Pérez-Gutiérrez can be reached at (571) 272-7915. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Application/Control Number: 10/650,188
Art Unit: 2609

Page 11

Leah Richmond
L.L.R./llr

March 13, 2007

A handwritten signature in black ink, appearing to read "Leah Richmond", with a large, sweeping flourish at the end.